PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
TAN-351

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]	Application Number	Filed
	10/533,567	2005-05-03
on _____	First Named Inventor	
	Domen	
Signature_____	Art Unit	Examiner
Typed or printed name _____	1793	J. A. Smith

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
 Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant/inventor.

- [ ] assignee of record of the entire interest.
 See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
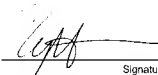 (Form PTO/SB/96)

- [✓] attorney or agent of record. Registration number _____ 46,376

- [ ] attorney or agent acting under 37 CFR 1.34.

 Registration number if acting under 37 CFR 1.34 _____

_____
Signature

Roger C. Hahn
Typed or printed name

202-637-0020
Telephone number

5/4/2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

- [ ] *Total of _____ forms are submitted.

Appl. No.	:	**10/533,567**	Confirmation No. 4563
Applicant	:	DOMEN *et al.*	
Filing or § 371 date	:	03 MAY 2005	
TC/A.U.	:	1793	
Office Action	:	February 4, 2009	
Docket No.	:	TAN-351	
Customer No.	:	62,479	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP: AF
FAX: 571 273-8300

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22314-1450

Sir:

      This is a request for a Pre-Appeal Brief conference filed with a Notice of Appeal. The claims have been twice rejected and this request is accompanied by the appropriate fee and filed within the three month shortened statutory period from the Office Action of February 4, 2009.

      Applicants submit that clear errors in fact and law have been made on the record. The Examiner and Supervisor have (1) omitted the essential elements needed for a *prima facie* rejection of obviousness, and (2) made factually incorrect assertions over the cited reference Takagaki *et al.* Hence, this request is properly before the Patent Office.

REMARKS

The Office Action of February 4, 2009 rejected Claims 1, 3, and 10 under 35 U.S.C. §

103(a) as being unpatentable over Takagaki *et al.* (2002). However, the *prima facie* case of

obviousness has not been established because the Ti/Nb proportions taught by Takagaki *et al.* do

not overlap the claimed ratio range, and there is no suggestion or motivation in Takagaki *et al.* to

make the claimed Ti/Nb limitation but rather a direct motivation that one of ordinary skill

diverge farther from it. Insofar as Claims 3 and 10 depend from and contain the limitations of

Claim 1, the same arguments apply over the rejections to these claims.

Claim 1 recites a solid acid catalyst represented by $HTi_xNb_yO_5$, wherein x is $1.1<x<1.2$

and y is $0.9>y>0.8$, having a Ti/Nb atomic ratio of $1.2<z<1.4$. [1]

On the other hand, the Examiner alleged that the cited reference Takagaki *et al.* teaches a

Ti/Nb atomic ratio (z) in the range from 0.833 to 5, for the compositions $HTiNbO_5$, HTi_2NbO_7

and $H_{0.9}Ti_{0.9}Nb_{1.1}O_5$. The Examiner further alleged that Ti/Nb atomic ratio (z) in these cases is

1, 2, and 0.818, respectively, where "x" is 1, 2, and 0.9, and "y" is 1, 1, and **1.9**. See Office

Action of Feb. 4, 2009, at page 3, ¶ 1.

However, this is incorrect. Takagaki *et al.* teaches the value of "y" in $H_{0.9}Ti_{0.9}Nb_{1.1}O_5$

being not 1.9, but 1.1. Also, the calculated z values taught by Takagaki *et al.* is not a range from

0.833 to 5 but rather the specific points of 1, 2, and 0.818, respectively. Table A below sets forth

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[1] Examiner improperly required applicants to file a RCE on Nov. 11, 2008 to correct a minor typographical error of "1.0" to "1.2" because it purportedly introduced new matter. However, the allegation is false because the complete range was already searched and examined as part of originally pending Claim 2 (*See* Int. Sum. Nov. 3, 2008; *Argued* in Req. for Recon. of Sep. 16, 2008). In fact, Claim 2 was added to Claim 1 in the Response of May 1, 2008 (page 4, ¶ 2). Since there was no new matter, entry was respectfully requested again on October 20, 2008, however it was denied a second time; thereby requiring an unnecessary RCE and adding unfair expense and delay.

the prior art values compared to the claimed limitations.

Table A

Variable	Takagaki *et al*. Value	Claimed Value
Ti = x	1, 2, 0.9	1.1 – 1.2
Nb = y	1, 1, 1.1	**0.8 – 0.9**
$\frac{Ti}{Nb} = \frac{x}{y} = z$	1, 2, **0.818**	1.2 – 1.4

As can be seen, Takagaki *et al*. teaches in the Results and Conclusion that

$H_{0.9}Ti_{0.9}Nb_{1.1}O_5$, which has a corresponding "z ratio" of $0.9/1.1 = \mathbf{0.818}$, has a **higher** catalytic

activity than a "z ratio" of Ti/Nb=1. See Takagaki *et al*. at Section 3. This value is clearly

outside the claimed "z ratio" range of 1.2<z<1.4, and teaches away from the claimed invention.

Furthermore, one of ordinary skill would understand that Takagaki *et al*. is suggesting that a

lower Ti/Nb ratio of 0.818 is better than a ratio of 1.0, based on an increase of acid catalytic

activity and would thereby, motivate that person to experiment with ranges below 1.0, away

from the claimed z range of 1.2 to 1.4. See Takagaki *et al*. at Section 3; see also Response of

Nov. 20, 2008 at page 4, ¶ 2 to page 5, ¶ 2. Although the reference teaches z values of 1 and 2,

these are only single data points, which fail to provide any logical line of reasoning why one of

ordinary skill in the art would be motivated to make the claimed ranges.

Takagaki *et al*. also fails to teach the presently claimed limitation of y being 0.9>y>0.8.

Instead, Takagaki *et al*. teaches values of 1, 1, and 1.1 for y. This is outside the claimed range.

Hence, Takagaki *et al.* fails to teach each and every claimed limitation necessary to establish the *prima facie* case of obviousness.

The Office Action also rejected Claims 5 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Takagaki *et al.* (2002) in view of Hara *et al.* (2002). <u>See</u> Office Action at page 5. Insofar as Claims 5 and 12 depend on or contain the limitations of Claim 1, the same argument over Takagaki *et al.* applies. It would not have been obvious to one of ordinary skill in the art to make the claimed Ti/Nb ratio from Takagaki *et al.* Although the Examiner alleged that one of ordinary skill would be motivated to modify the ratio because changes in catalytic activity associated with experiments in atomic ratios have been conducted in the past, this cannot render obvious every possible experiment in catalytic activity, especially where the reference being relied upon teaches that a lower range of the z value is preferable to higher z values.

Moreover, the allegedly taught range of 0.833 to 5 relies upon different compounds in Takagaki *et al.* of $Cs_{1-x}Ti_{2-x}Nb_{1+x}O_7$ (Ti/Nb=2) or $K_{3-x}Ti_{5-x}Nb_{1+x}O_{14}$ (Ti/Nb=5), and not $HTiNbO_5$. <u>See</u> <u>id</u>. These different compounds form only the salt of Cs or K - and not H - as in the claimed compound $HTi_xNb_yO_5$. Takagaki *et al.* does not evaluate the Cs and K salts as a solid acid catalyst, and hence cannot be relied upon to assert the expanded range 0.833 to 5. The Examiner's assertion that catalyst function is not drawn to the hydrogen, cesium or potassium component is speculative. For instance, can the Examiner make the same claim as to Oxygen in each of the different compounds in Takagaki *et al.*? The field of art is unpredictable and, Takagaki *et al.* suggests experimenting in an opposite direction from the claimed invention. <u>See</u> Response of May 1, 2008 at pages 5-6; <u>See</u> <u>also</u> Response of Nov. 11, 2008 at page 6, ¶ 2.

Takagaki *et al.* fails to teach the desirability of the specific range of $1.2<z<1.4$. Clearly, there would be no motivation to combine Hara *et al.* with the solid acid catalyst of Takagaki *et al.* to determine a surface area value of the nano-sheet material.

Conclusion

In light of the foregoing, it is submitted that the application is now in condition for allowance. It is therefore respectfully requested that the rejections be withdrawn and the application be allowed on the existing claims with prosecution remaining closed.

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Respectfully submitted,
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